

# Bradley F. Lamkin

National Weather Center  
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## EDUCATION

**The University of Oklahoma**, Norman, OK  
Master of Science, Meteorology, Expected July 2023  
Area of Study: Aerosol interactions with clouds and radiative fluxes.

**Virginia Polytechnic Institute and State University**, Blacksburg, VA  
Bachelor of Science, Meteorology, May 2021  
Minors in Geography, Geographic Information Science, and Mathematics  
G.P.A. 3.84/4.00

## RESEARCH EXPERIENCE

**The University of Oklahoma** July 2021 - Present  
School of Meteorology  
(CL)<sup>2</sup>EAR: Cloud Climate Aerosol Radiation Research Group  
Graduate Research Assistant  
Advisor: Jens Redemann, Ph.D.  
Co-Advisor: Ian Chang, Ph.D.  
- Studying how atmospheric aerosols effect clouds and downward radiative fluxes.  
- Comparing Oklahoma mesonet radiative flux observations with CERES: TERRA and AQUA satellite observations.

**Virginia Polytechnic Institute and State University** January 2021 - May 2021  
Department of Geography  
Advisor: Craig A. Ramseyer, Ph.D.  
- Determined atmospheric river types in the Central and Eastern United States by using self-organizing maps.  
- Analyzed changes in moisture transport using a 40 year time series.  
- Confirmed that mid-latitude cyclones are the primary divers of moisture transport, especially in the "cool season."  
- Looked at implications for flash flooding in the densely populated Northeast and Mid-South regions of the U.S.

**National Weather Service Baltimore/Washington** May 2020 - August 2020  
Student Volunteer  
Advisor: Jason Elliott, M.S.  
Co-Advisor: Daniel Hofmann, M.S.  
- Developed a threat matrix, based on the analysis of: Storm Prediction Center convective outlook probabilities, 500 hPa height falls, moist-unstable convective available potential energy and surface to 500 hPa shear.  
- Created a python program to create threat area maps for the forecast office based on the matrix.  
- Presented results to the National Weather Service Baltimore/Washington forecast office.

**National Weather Service Baltimore/Washington** May 2020 - August 2020  
Student Volunteer  
Advisor: Jason Elliott, M.S.  
Co-Advisor: Brian LaSorsa, M.S.  
- Studied meso-beta element velocity, moist-unstable convective available potential energy, and warm cloud layer depth to enhance the current assessment and predict potential severity in advance of major flash flood events.  
- Created a python script to extract and analyze BUFKIT soundings.

- Modified existing days 3-7 threat matrix based on the results.
- Created a python program to create threat area maps for the forecast office based on the matrix.
- Presented results to the National Weather Service Baltimore/Washington forecast office.

## Virginia Polytechnic Institute and State University

March 2019 - March 2020

Department of Geography

Advisor: David Carroll, M.S.

Co-Advisor: Michael Sporer, M.S.

- Assisted the National Weather Service in Blacksburg, VA by deploying unmanned aircraft systems along tornado damage paths to identify tree damage patterns.
- The goal was to create an algorithm that automatically determines if the damage was caused by straight-line winds or a tornado.
- Completion of the project was delayed due to the COVID-19 Pandemic.

## JOURNAL PUBLICATIONS

- *Submitted:* Ramseyer, C.A., Stanfield, T.J., Van Tol, Z., Gingrich T., Henry, P., Forister, P., **Lamkin, B.**, Stackhouse, S., Samaiya Sauda, S., Atmospheric Rivers Types and Historical Trends in Moisture Transport in the Eastern and Central U.S., J. Geophys. Res., August 2021.

## CONFERENCE PRESENTATIONS

**Lead Poster Presenter:** 2021 American Meteorological Society Annual Meeting January 2021  
Leveraging Sub-Synoptic Patterns and Ensemble Data to Localize Severe Weather Threat During the Days 3-7 Period in the Baltimore/Washington WFO Area of Responsibility

**Poster Presenter:** 2021 American Meteorological Society Annual Meeting January 2021  
Utilizing Ensembles to Enhance Conveyance of Potential Flash Flood Severity in the Days 3-7 Flood Threat Matrix for the Baltimore/Washington WFO County Warning Area

**Lead Poster Presenter:** 2020 National Weather Association Annual Meeting September 2020  
Leveraging Sub-Synoptic Patterns and Ensemble Data to Localize Severe Weather Threat During the Days 3-7 Period in the Baltimore/Washington WFO Area of Responsibility

**Poster Presenter:** 2020 National Weather Association Annual Meeting September 2020  
Utilizing Ensembles to Enhance Conveyance of Potential Flash Flood Severity in the Days 3-7 Flood Threat Matrix for the Baltimore/Washington WFO County Warning Area

## TEACHING EXPERIENCE

**Undergraduate Teaching Assistant** Virginia Tech August 2018 - May 2020

### **GEOG 1524 - Into Earth's Climate (January 2020 - May 2020):**

Taught, hosted review sessions, had regular office hours, and helping professor design presentations. Material included physical climatology, hydroclimatology, climate dynamics, paleoclimatology, and anthropogenic climate change.

### **LDRS 2014 - Principles of Peer Leadership (January 2020 - May 2020):**

Taught future Resident Advisors important leadership skills for the role, graded student assignments, and was available after lectures for questions.

### **COS 1015 - Successful Starts in Science (August 2018 - December 2018):**

Taught and motivated first-year students in the Curie and Da Vinci Living Learning Communities by planning and executing activities focused on social, academic, and professional development.

